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Forecast of Demand

Natural Gas Market Outlook

2006 – 2016

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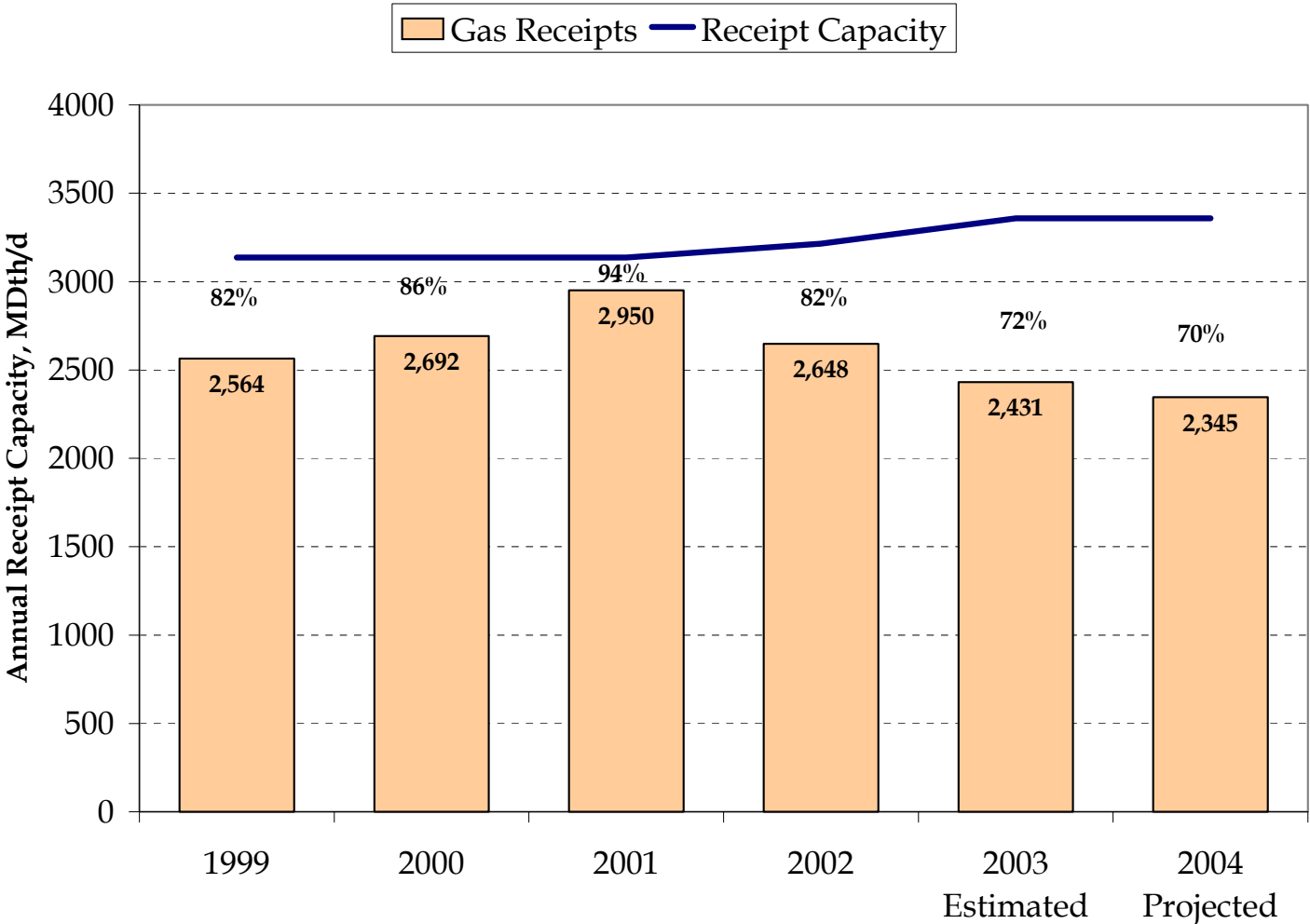


Overview

- ❑ Overall level of demand 2004-2013
- ❑ Forecast variability
- ❑ Drivers of EG demand uncertainty



PG&E's historical receipts and system load factor



Demand Forecasting Uncertainty

- ❑ Little uncertainty about residential and commercial demand
 - ⇒ Most forecasters expect growth rates of 1-2%/year
- ❑ Industrial demand has decreased in recent years and is generally expected to be flat
- ❑ EG growth rates appear reasonable, but there are many drivers of future EG growth that lead to a large forecast uncertainty
 - ⇒ There are both long-term and short-term variables that will impact EG demand in the 2004-2016 timeframe.



Drivers of EG Forecast Uncertainty

❑ Short-term variables

⇒ Hydro conditions

○ +213 MDth/d, - 161 Mdth/d (GAII 2004)

❑ Long-term variables

⇒ Development of DSM and renewables standards

○ $\sim \pm 100$ MDth/d by 2013 (CEC)

⇒ Development of generation with low running costs

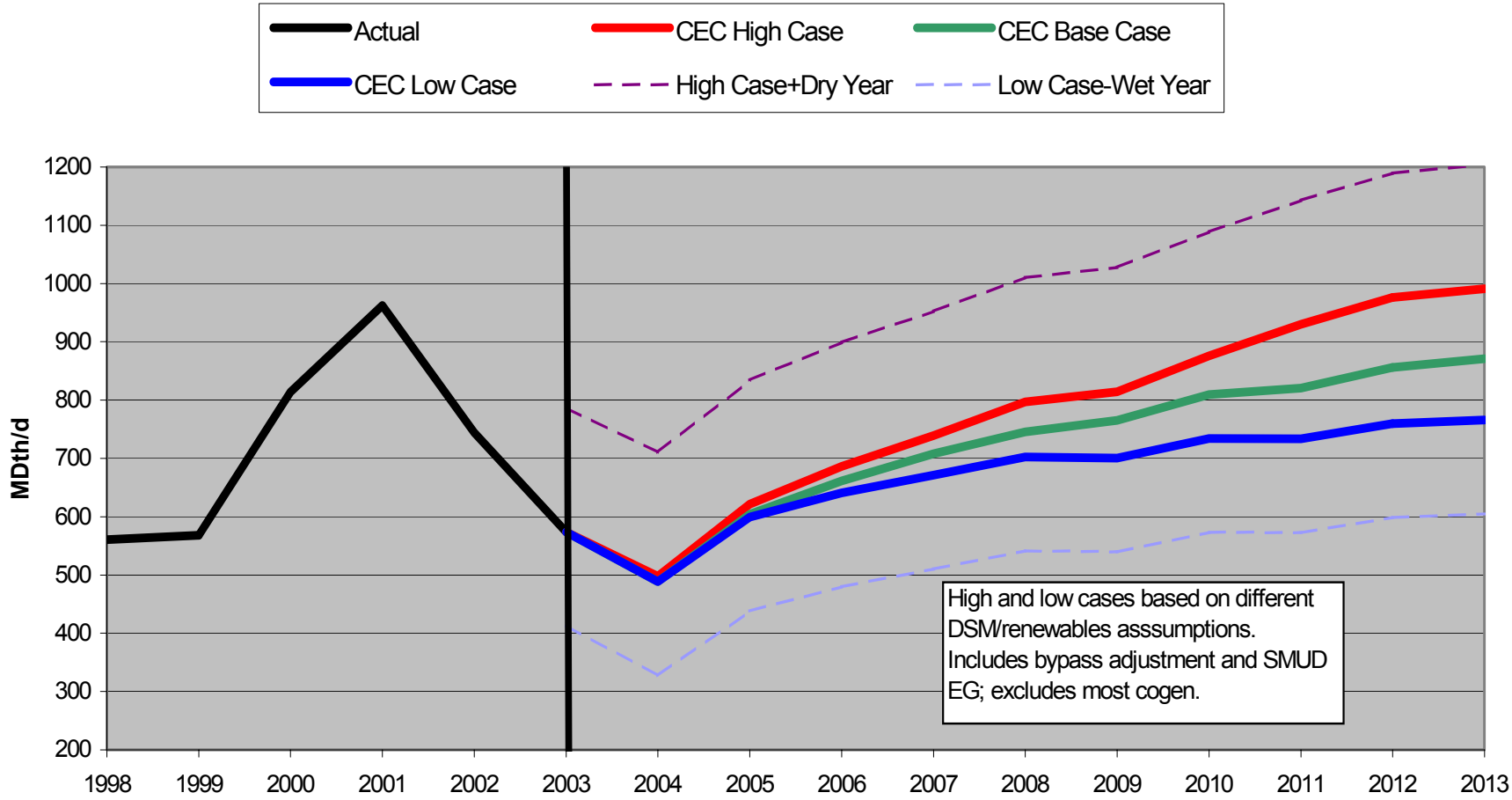
⇒ Electric demand growth in CA and the WECC

⇒ New electric transmission infrastructure and the location of new power plants

⇒ Bypass of PG&E system



EG Demand Forecast Variability





EG Forecast Uncertainty and Capacity Planning

- ❑ Forecast uncertainty needs to be incorporated into capacity planning guidelines
- ❑ Determinations of slack capacity and how capacity should be expanded will need to account for the variability of the EG forecast demand
- ❑ Forecast uncertainty could lead to over-building of gas infrastructure and the utilities should not be penalized for overbuilding due to forecast uncertainty